

REMARKS/ARGUMENTS

Reconsideration of the present application as amended is respectfully requested.

Claims 1, 2, 4-8 and 11-17 remain in this application. Claims 3, 9 and 10 have been canceled. Claims 12-17 are new.

In the Office action the Examiner objected to Claim 3 under 37 CFR §1.75(c) as being in improper dependent form for failing to further limit the subject matter of a previous claim. In response, Claim 3 has been canceled, without prejudice. New Claim 13 is submitted which incorporates features of canceled Claim 3.

Further, Claims 2 and 11 were subject to a rejection for informality in spelling ("valves" instead of "values.") This spelling error has been corrected.

In the Office action, Claim 8 was rejected under 35 U.S.C. §112, second paragraph as being indefinite for including broad and narrow limitations in the same claim. In response, Claim 8 has been amended without prejudice and new Claim 12, which depends from Claim 8, has been added. It is respectfully submitted that amended Claim 8 and new

Claim 12 particularly point out and distinctly claim subject matter which applicants regard as the invention. Accordingly, applicants respectfully request that this ground for rejection be withdrawn.

In the Office action, the Examiner rejected Claims 1, 3-7 and 9 under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 5,742,132 (*Huber*). In response, Claim 1 has been amended. Claims 3 and 9 have been canceled without prejudice. New Claims 13, 14 and 15 have been added to clarify Applicants' invention.

It is respectfully submitted that Claim 1 and new Claim 14 are patentable over *Huber* for at least the following reasons.

In the Office action *Huber* is cited at Fig. 1 and col. 2, line 54 to col. 3, line 12, as disclosing a high pressure discharge lamp with a run-up phase comprising at least the interval from .5 s after ignition of the lamp to 4 s. after ignition of the lamp.

Claim 1 and new Claim 14, however, recite a run-up phase comprising at least the interval from 1 s after ignition of the lamp to 3 s after ignition of the lamp. Even assuming that the time (T2') during which, in *Huber*,

an AC current is imposed to prevent glow discharges can be properly compared with the run-up phase of the present invention, *Huber* neither discloses nor suggests a run-up phase comprising at least an interval from 1 s after lamp ignition to 3 s after lamp ignition. As can be seen, for example, from Fig. 1 of *Huber*, the interval does not exceed 0.75 s. (One time unit in Fig. 1 of *Huber* is 50 milliseconds (col. 3, line 3).) In the invention of *Huber*, the time period T3, which follows T2', is a transitional phase in which the lamp current drops to its nominal rated value (col. 3, lines 13-15).

Huber, moreover, discloses only a method and system using a run-up phase current with a form factor greater than one for avoiding glow discharge and lighter loading of electrodes during lamp starting. As can be seen from Fig. 1 of *Huber*, *Huber* teaches only an abrupt run-up of current during a 250 millisecond segment of a run-up phase. *Huber* cannot be said to disclose or suggest a programming unit which effectuates a substantially rising gradient in time of the current over a run-up phase of at least an interval from 1 s after ignition of the lamp to 3 s, as recited in amended Claim 1 and new Claim 14.

In addition, as Claims 4-7, depend from independent Claim 1, Applicants respectfully request that Claims 4-7 also be allowed over the prior art of record.

New Claim 13 recites a run-up phase of at least an interval from 0.5 s after ignition of the lamp to 4 s after ignition of the lamp and a substantially rising gradient in time of the current throughout the run-up phase.

Applicants respectfully submit that such a run-up phase and gradient are nowhere disclosed or suggested by *Huber* or *Ishizuka*, singly or in combination.

Huber teaches and suggests only an abruptly rising current during a 250 millisecond interval at the end of a run-up phase as shown in Fig. 1. There is no disclosure or suggestion in *Huber* of a programming unit which effectuates a substantially rising gradient of current throughout a run-up phase of at least an interval from 0.5 s after ignition of the lamp to 4 s after ignition of the lamp, as recited in Claim 13.

Ishizuka teaches and suggests only that "... since an optimal power can be supplied in accordance with the state of the lamp temperature, the luminous flux can rise quickly and the life of the lamp can be made longer..." (col. 14,

lines 13-16) or that "...since the invention comprises the high-pressure discharge lamp lighting apparatus that can supply an optimal power to the lamp in accordance with the state of the lamp temperature when the operation is started, keep the luminous flux rise and make the life of the lamp longer, a vehicle of high reliability can be provided" (col. 5, lines 51-56). Moreover, *Ishizuka* indicates that the current decreases in order to supply the lamp with optimal power, i.e. "...the capacitor is charged with the current correlating with the target power value, the target power value is set on the basis of the charging voltage of the capacitor by the target power setting device at the startup, and the target power value is varied (lowered) in accordance with the duration of the operations" (col. 14, lines 21-27).

In the Office action, the Examiner rejected Claims 2, 8, 10 and 11 under 35 U.S.C. §103(a) as being unpatentable over *Huber* in view of U.S. Patent No. 6,163,115 (*Ishizuka*). Claim 10 has been canceled without prejudice.

Ishizuka is directed only to a lamp with complex controls (Fig.'s 1, 3,4) in which an optimal power is supplied to the lamp in accordance with a lamp temperature

when the operation is started, the optimal power keeping the luminous flux rise and making the life of the lamp longer (col. 5, lines 51-56). The optimal power is chosen with reference to a lamp temperature.

In stark contrast, Claim 2 and Claim 11 recite a time gradient chosen such that the luminous flux generated by the lamp achieves at least at two given moments assigned minimum values. Applicants respectfully submit that neither *Huber* nor *Ishizuka*, alone or in combination, discloses or suggests such a time gradient. In the Office action the Examiner stated that it would have been within the skill of an artisan at the time the invention was made to modify the control circuit of *Huber* for providing the high discharge lamp with an optimal power during the period of starting the discharge lamp in response to the discharge lamp temperature to allow the luminous flux rise for the purpose of extending the life of the lamp as taught by *Ishizuka*. Such a modification, however, would not result in the present invention. There is no disclosure or suggestion whatsoever in *Ishizuka* that such an optimal power would generate a current in which, the time gradient is chosen such that the luminous flux generated by the lamp

achieves assigned minimum values at least at two given moments in a substantially rising gradient over a run-up phase of 1 s to 3 s after ignition, as recited in Claim 2 and in amended Claim 1, from which Claim 2 depends, or as recited in Claim 11.

As Claim 8 depends from independent Claim 1 and new Claim 15 depends from new Claim 14, Applicants respectfully request that Claims 8 and 15 also be allowed over the prior art of record.

New Claim 16 further clarifies Applicants' invention. Claim 16 recites that the maximum current reached during the run-up phase corresponds to the maximum current admissible for the lamp, as set forth in the specification of the present invention at page 7, lines 10-12. In both the prior art cited in *Huber* and in the invention of *Huber* the current during a run-up period is substantially over the rated operating currents (col. 1, lines 60-64) or higher than the effective value of the nominal current in ordinary operation (col. 3, lines 31-36). *Ishizuka* teaches and suggests only use of an optimal power based on starting temperature for a rise in luminous flux, as discussed above.

The start of the run-up phase may also take place in a period in which the lamp is already being operated with alternating current (specification at page 3, lines 2-3). Accordingly, new Claim 17 is presented which recites that the run-up phase comprises the interval from a time after ignition of the lamp at which the lamp is operated with an alternating current to at least 3 s after said time. Applicants respectfully submit that neither *Huber* nor *Ishizuka*, alone or in combination, discloses or suggests a run-up phase of at least 3 s starting during AC operation after ignition as recited in new Claim 17.

In addition, to put those claims in better form, Claims 1, 2, 4-8 and 11 have been amended by removing the reference numerals.

In view of the above, it is respectfully submitted that Claims 1, 2, 11, 13, 14, 16 and 17 are patentable, that Claims 4-8, 12 and 15 are patentable at least based on their respective dependencies and that the present application is in condition for allowance. A Notice of Allowance is earnestly solicited.

Appl. No. 10/502,172
Amdt. dated Jan. 5, 2006
Reply to Office action of Oct. 6, 2005

If any informalities remain, the Examiner is requested to telephone the undersigned in order to expedite allowance.

Please charge any fee deficiencies and credit any overpayments to Deposit Account No. 14-1270.

Respectfully submitted,

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January 5, 2006